

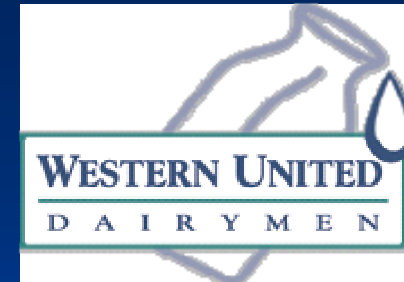
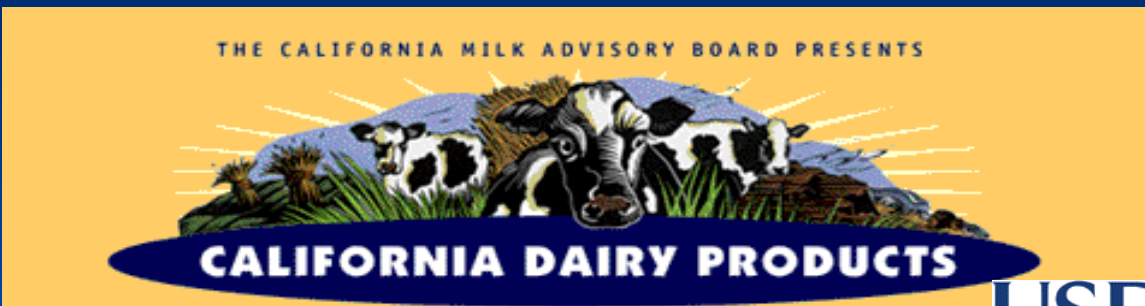
# **Region 5's Dairy Waste Discharge Requirements**

## ***Leveraging Assistance Resources to Achieve Compliance***



***Michael Payne DVM, PhD***  
***Department of Environmental Toxicology***  
***University of California – Davis***  
***Program Director, CDQAP***

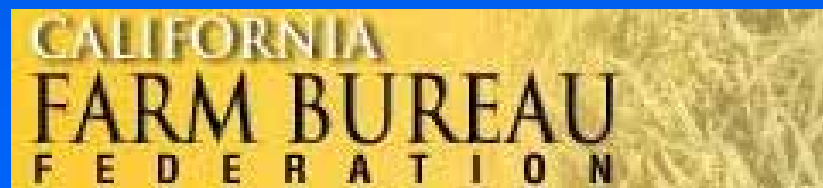
# CDQAP & R5 Permit



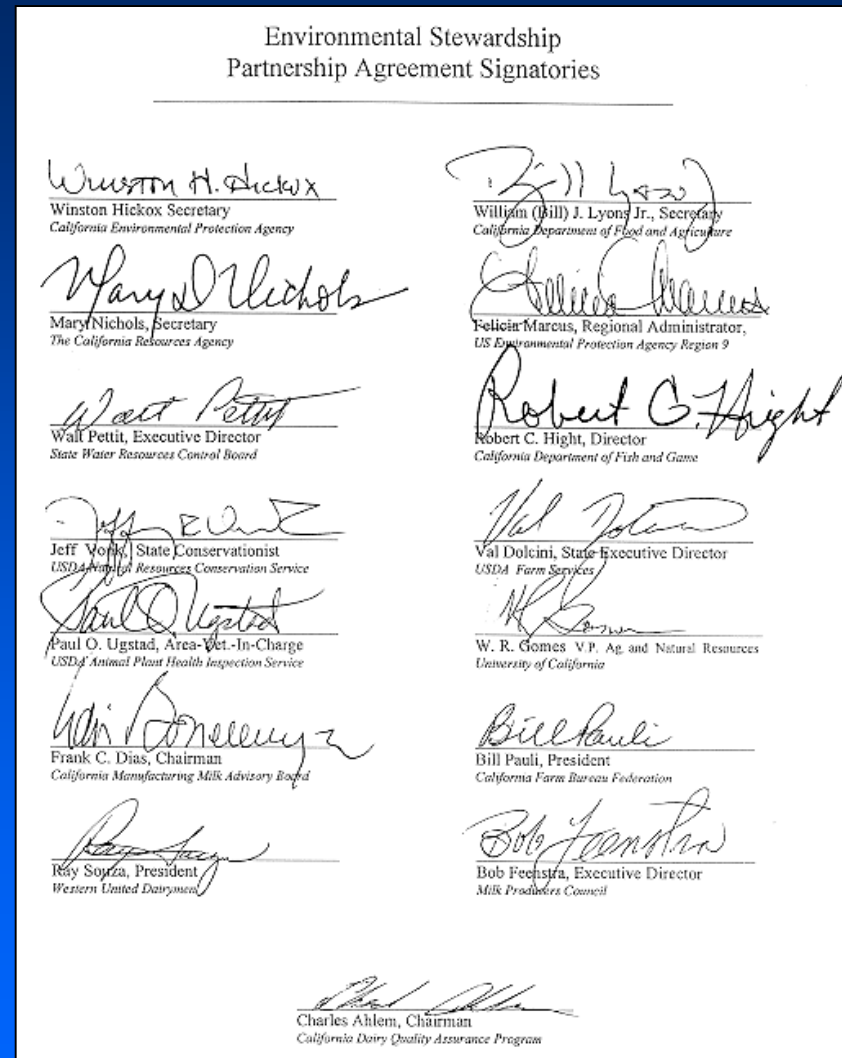
SustainableConservation



Milk Producers Council



# Structure & Members of the Partnership Agreement



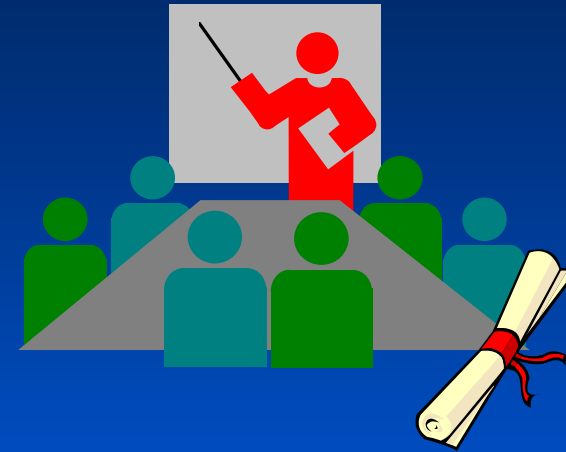
**CDQAP : Compliance through education**



# UCCE Coordinates Curriculum Development and Farm Certification for the program...

## Environmental Short Course

1200 producers completed all 6 hours of Environmental Short-course



## Evaluation/Certification

225 dairies have certified

Uses CDFA dairy inspectors

Wayne Nastri, U.S. EPA regional administrator & "Chuck" Ahlem CDFA unveil a CDQAP sign at Van Exel Dairy.



CALIFORNIA DAIRY



Quality Assurance

P R O G R A M

# Classroom Education



**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #7  
Assessing the Risk of Ground and Surface Water Contamination From  
Manure Storage Facilities

**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #8  
Assessing the Risk of Ground or Surface Water Contamination From  
Corral Management

**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #9  
Assessing the Risk of Ground and Surface Water Contamination From  
Silage Production and Storage

**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #13  
Assessing the Risk of Ground and Surface Water Contamination From  
Manure Management

Why Should I be concerned?

Manure, in solid and liquid forms, is used as a fertilizer and soil conditioner.

University of California Cooperative Extension  
Sizing Dairy Manure Holding Pond

Step 10 of 12:  
 runoff Volume

runoff Summary

Type	Area (sq ft)	Runoff (cu ft) for Storage Period		
		Storm	Normal	Total
Roofed Not Diverted	118688	69937	239444	309375
Concrete	223972	46882	155778	206452
Unpaved	183238	131758	148972	280722
<b>Subtotal</b>	<b>525900</b>	<b>248743</b>	<b>544198</b>	<b>792928</b>
Type	Area (sq ft)	Direct Runoff (cu ft) for Storage Period		
		Storm	Normal	Total
Setting Basin				

## The Do's and Don'ts of Manure Management and Clean Water

The Partner operators of the California Dairy Quality Assurance Program (CDQAP) realize there may be some confusion regarding legal and sound manure management practices.

This pamphlet of accurate and authoritative manure management practices was developed to assist producers. The practices described in this publication are from California. The authors assume, but are not liable, that they are correct in fact and application. If you have any questions, or need the assistance of a specialist, please call your representative to the CDQAP board at once.

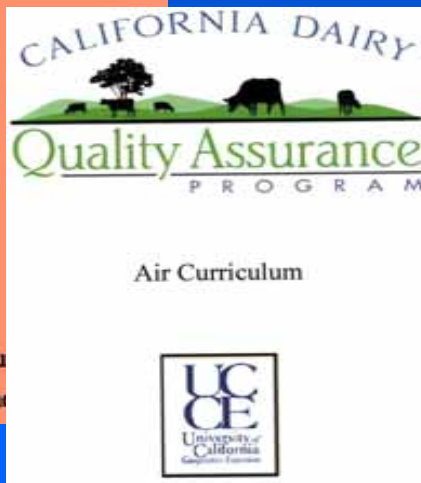
Contributors are listed at the end of this publication. Copyright 2000, University of California Cooperative Extension, 2000.

## Teaching Tools

## Environmental Stewardship Short Course I For California Dairy Operators



California Dairy Quality Assurance  
In Cooperation With Its Partners



## Risk Assessment Documents

## Expanding Curriculum

San Joaquin Valley Air Pollution Control District  
Supplemental Application Form  
Permit Application for Dairy Farms

Please list the total number of cows currently at your dairy:

Milk cows	Dry Cows	Heifers 15-24 months	Heifers 7-14 months	Heifers 4-6 months	Calves	Total

Please list the maximum number of cows that your farm was designed for:

Milk cows	Dry Cows	Heifers 15-24 months	Heifers 7-14 months	Heifers 4-6 months	Calves	Total

## Permits




Leveraging Resources...

## Example: New Air Curriculum



Delivered to > 700  
producers in 17  
meetings in 8 counties

Curriculum developed by UCCE. Started with Power Point  
6- 10 industry/regulatory/UC & computers assist w/ mitigation  
plans.



**GOT HELP?**

**MAY & JUNE AIR QUALITY WORKSHOPS FOR  
SAN JOAQUIN VALLEY DAIRY PRODUCERS**

**Free sessions offer friendly, "one-stop" help in completing all  
necessary forms for meeting July 1 deadlines**

**What deadlines do producers face?**  
Under a new state law known as SB 700, large dairies (and some large farms) in the San Joaquin Valley must apply for air quality permits by July 1. Under a separate regulation, certain dairies must also begin "conservation management practices" (CMPs) to control dust, as of July 1.

**Does it apply to me?**  
If you have more than 500 cows on your dairy, or farm more than 100 contiguous acres of land, or both, you are required to file forms related to CMPs, permits or both and you are urged to attend the workshops. If you are under 500 cows and farm under 100 acres, you do not need to attend.

**I farm other crops. Do I need to attend other workshops?**

**WORKSHOP SCHEDULE**

*The following workshops are for dairy producers/ beef feedlot owners only. Morning and evening workshops are identical – please attend only one. Not a dairy farmer? Call your local Farm Bureau for general workshop schedules.*

**San Joaquin County**  
Tuesday, May 25, 9:30 a.m. & 6:00 p.m., Masonic Lodge, 1500 Viking Street (between Main & Hwy 120) Escalon

**Stanislaus County**  
Wednesday, May 26, 9:30 a.m. & 6:00 p.m. Stanislaus Fairgrounds, 900 North Broadway (Bldg E7 -White Arch Gate Entrance) Turlock

**Fresno County**  
Thursday, May 27, 9:30 a.m. & 6:00 p.m., Riverdale Memorial Hall, 3085 W. Mount Whitney, Riverdale

# Program Delivery from 2004

## ROWD Classes

Bakersfield Sept 15 2005  
Hanford Sept. 20 2005  
Hanford Sept. 20 2005  
Hanford Sept. 20 2005  
Tulare Sept. 21 2005  
Tulare Sept. 21 2005  
Tulare Sept. 21 2005  
Chowchilla Sept. 22 2005  
Chowchilla Sept. 22 2005  
Riverdale Sept. 27 2005  
Riverdale Sept. 27 2005  
Stevinson Sept. 28 2005  
Stevinson Sept. 28 2005  
Stevinson Sept. 28 2005  
Stockton Sept. 29 2005  
Stockton Sept. 29 2005  
Modesto Oct. 6 2005  
Modesto Oct. 6 2005  
Modesto Oct. 6 2005  
Orland Oct. 11 2005  
Orland Oct. 11 2005  
Elk Grove Oct. 12 2005  
Elk Grove Oct. 12 2005

## Air Particulate Classes

Escalon May 25 2004  
Escalon May 25 2004  
Turlock May 26 2004  
Turlock May 26 2004  
Riverdale May 27 2004  
Riverdale May 27 2004  
Tulare June 1 2004  
Tulare June 1 2004  
Chowchilla June 2 2004  
Chowchilla June 2 2004  
Stevinson June 3 2004  
Stevinson June 3 2004 Bakersfield  
June 8 2004  
Bakersfield June 8 2004 Hanford  
June 8 2004  
Hanford June 8 2004  
Tulare Dec. 16 2004  
Tulare Dec. 16 2004  
Modesto Dec 17 2004  
Modesto Dec 17 2004  
Tulare Nov. 22 2005  
Modesto Dec. 8 2005

## Evaluator or Partner Training

Evaluator Training July 14 2005  
Partner Training Dec. 13 2005  
Evaluator Training Jan 17 2006  
Evaluator Training Mar 7 2006  
Evaluator Training Apr 25 2006  
Evaluator Training May 31 2006  
Evaluator Training June 27 2006  
Partner Training Aug 8 2006  
Partner Training Aug 9 2006

## ES Short Course

WUD Feb 2 2005  
Tulare Nov. 21 2005  
Tulare Nov. 21 2005  
Tulare Nov. 22 2005  
Modesto Nov. 30 2005  
Modesto Dec. 1 2005  
Modesto Dec. 7 2005

## Farm Security Beta Test

UCCE Asilomar Sept. 28 2005  
CDFA/OHS/OES Sac Nov 1 2005  
CFBF Sacramento Feb. 8 2006  
WUD Sacramento Mar 1 2006  
Clover-Stornetta Apr 26 2006  
Hilmar Oct. 25 2006\*

## Presentations

CFBF Mar. 1, 2005  
UCD Dairy Day Mar. 22 2005  
WUD Ex Board April 15 2005  
UCD Dairy WG April 28 2005  
CARES Reg Tour May 18 2005  
Conestoga Rover Jan. 26 2006  
Ag Roundtable Jan. 30 2006  
North V Dairy Day Jan. 31 2006  
Tulare Farm Show Feb. 15 2006  
WWP April 24 2006 UCD Dairy  
Production June 2 2006 CMAB  
CMAB Interns June 28 2006  
NRCS Summit July 10 2006



## Doesn't Include:

Yearly (FASS, CFAH, USDA Formula Funds, CDRF, CMAB) quarterly meetings (Partners, Johnes, IACT, IFSA), monthly CARES meetings or incidental planning meetings (i.e. > a dozen RB5 meetings)

**1333 producer/class events since 2004.**



# Outreach for Waste Discharge Requirements



# Existing Conditions Report

## Preliminary Dairy Facility Assessment

### Waste Management Plan

*T. Harter et al. / Journal of Contaminant Hydrology 55 (2002) 287–315*

291

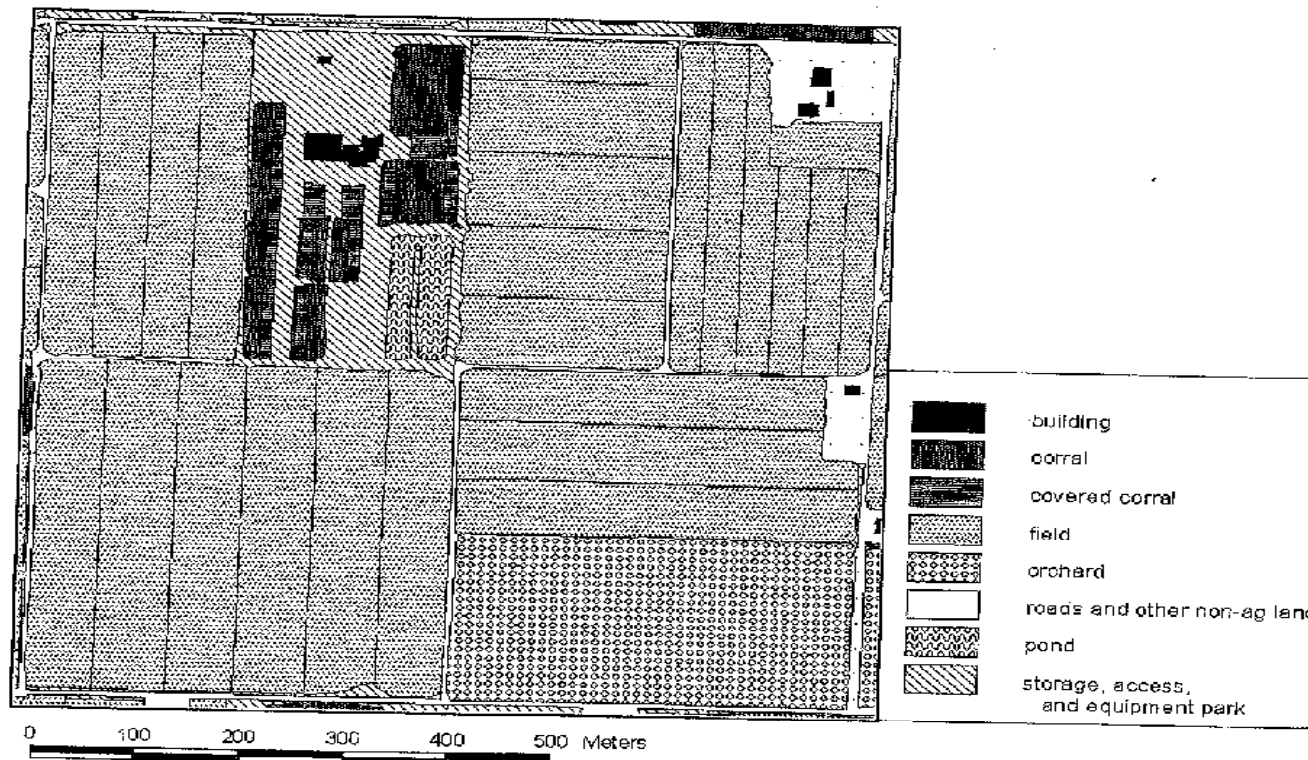


Fig. 2. Map of a typical freestall dairy with corrals, feed storage areas, solids storage area, liquid manure storage pond (lagoon), residences, and forage crop land. Total dairy area is approximately 64 ha.

# Nutrient Management Plan



Compliance through Education



# Implementing a Monitoring Program

*T. Harter et al. / Journal of Contaminant Hydrology 55 (2002) 287–315*

299

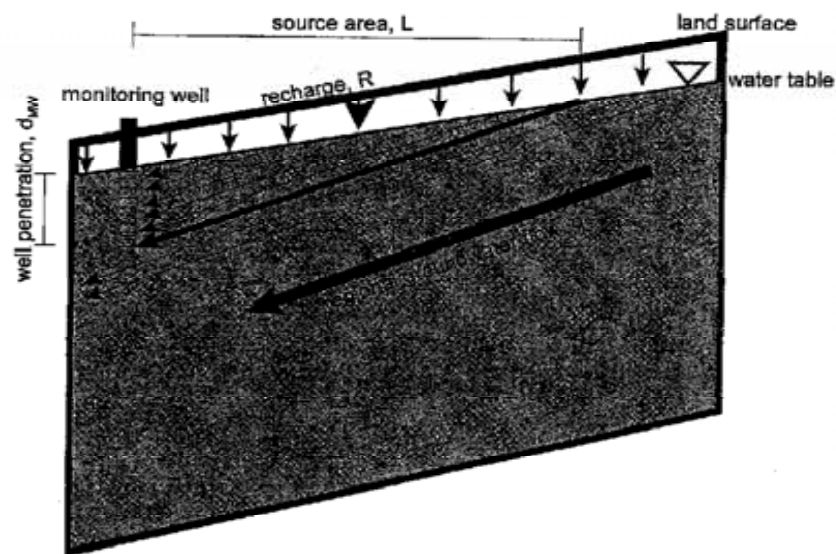


Fig. 3. Simplified shallow aquifer cross-section along the regional groundwater gradient. If uniform recharge rate,  $R$ , groundwater discharge rate,  $q$ , and monitoring well screen depth,  $d_{mw}$ , are known, the size of the source area can be estimated from Eq. (1).

- Routine facility inspections
- Manure monitoring
- Wastewater monitoring
- Irrigation monitoring
- Water use monitoring
- Soil monitoring
- Plant tissue monitoring
- Discharge monitoring
- Tailwater monitoring
- Stormwater monitoring
- Groundwater monitoring

**Compliance through Education**

# Proposed Interim Facility Modifications

- Adequate backflow prevention
- Corral design and management
- Parlor, manure and feed storage
- Divert & contain rainwater systems
- Retention pond depth marker
- Reconstruction of ponds
- Fencing to prevent animals from entering surface water
- Closing irrigation/drinking wells
- Constructing monitoring wells

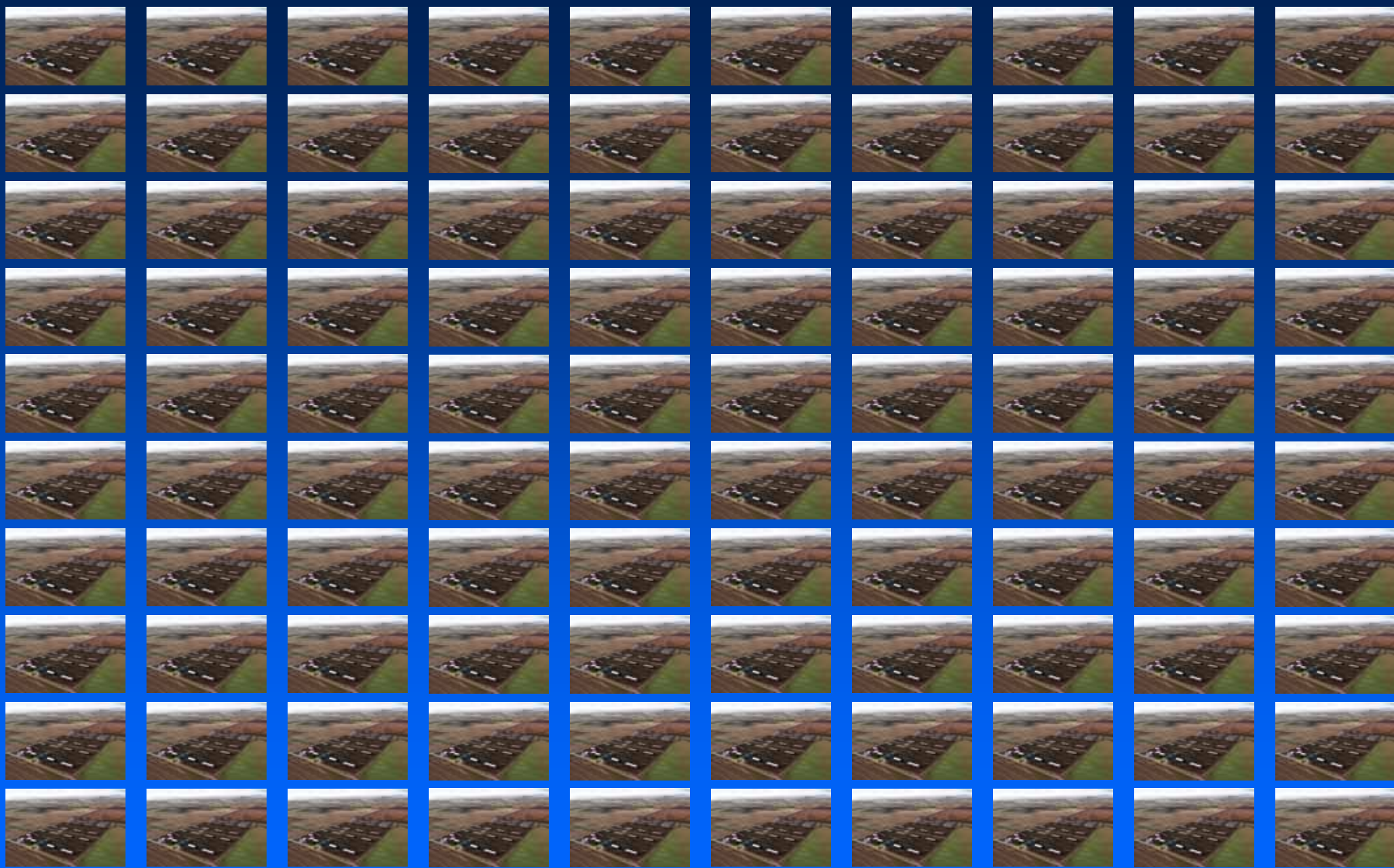


**Compliance through Education**



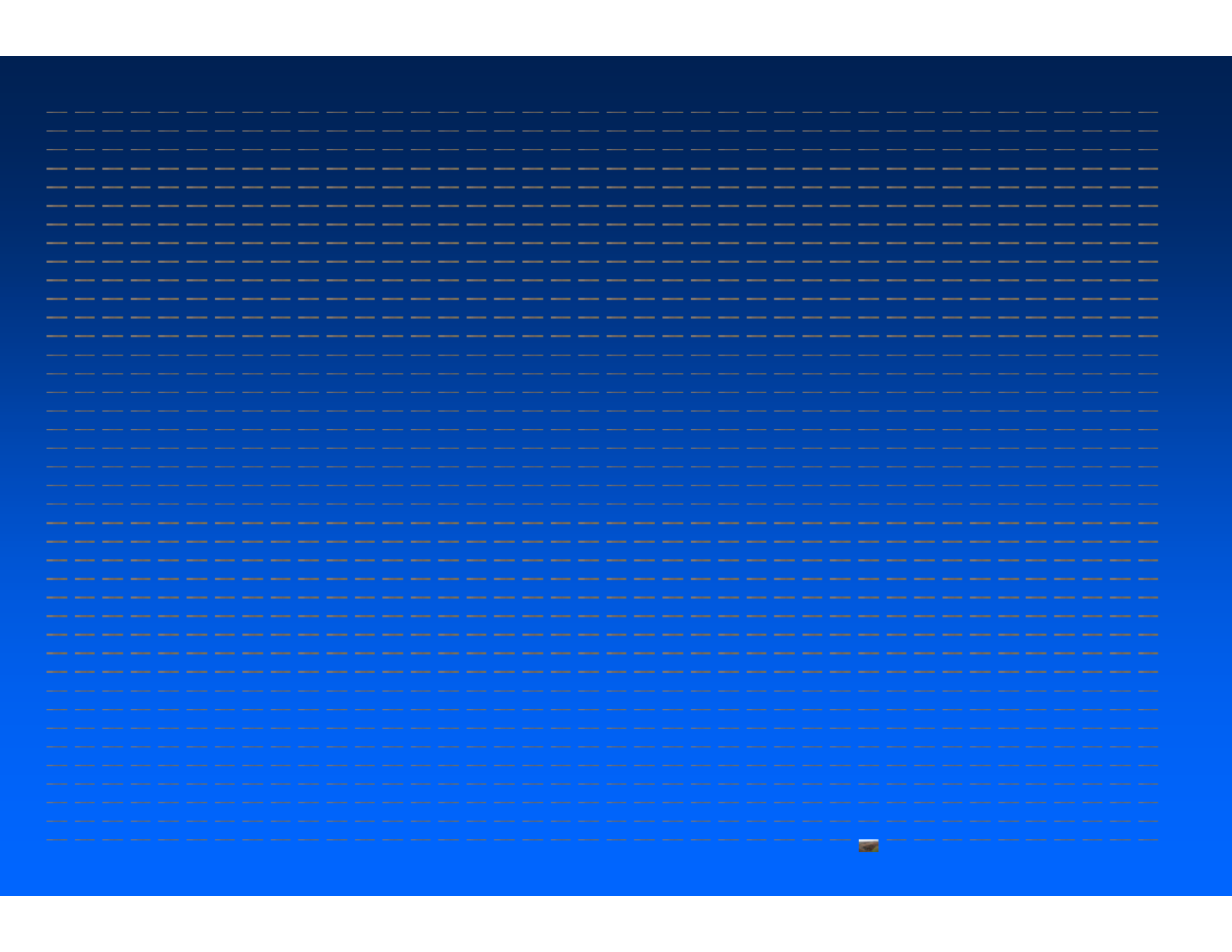












# An achievable education/compliance program.



**Draft 5-year compliance & education plan for Central Valley dairy farms. Yellow is deliverables to Regional board. The first step achieved a 98% compliance rate!**

Microsoft Excel - staged process rev 11.xls

File Edit View Insert Format Tools Data Window Help

107 Retrospect plan and schedule

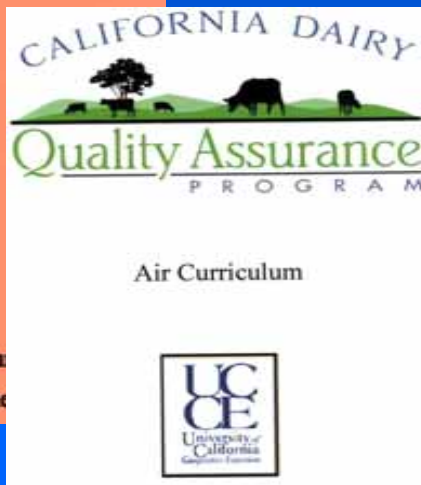
	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
1	Cells to yellow are for deliverables to RRB.						
2	Cells to yellow suggest deliverables dates.						
3	RRB	4 Dec 06	4 Jan 07	4 Dec 06	4 Dec 06	4 Dec 06	4 Dec 06
4	CEQAP	4 Dec 06	4 Dec 06	4 Dec 06	4 Dec 06	4 Dec 06	4 Dec 06
5							
6	Objective: make up all missing paperwork.						
7	Education-Awareness, compliance, RRB, primary concerns, New Pledge, CDP, contributions to sampling.						
8	Objective: get engaged in process, show people light at end of tunnel, answer the question: does my system need changes to apply regulatory rules.						
9	Assess current resource handling equipment - if not documented, identify it.						
10	Objective: develop a plan to meet regulatory requirements for handling equipment.						
11	Objective: develop a plan to meet regulatory requirements for handling equipment.						
12	Objective: develop a plan to meet regulatory requirements for handling equipment.						
13	Objective: develop a plan to meet regulatory requirements for handling equipment.						
14	Objective: develop a plan to meet regulatory requirements for handling equipment.						
15	Objective: develop a plan to meet regulatory requirements for handling equipment.						
16	Objective: develop a plan to meet regulatory requirements for handling equipment.						
17	Objective: develop a plan to meet regulatory requirements for handling equipment.						
18	Objective: develop a plan to meet regulatory requirements for handling equipment.						
19	Objective: develop a plan to meet regulatory requirements for handling equipment.						
20	Objective: develop a plan to meet regulatory requirements for handling equipment.						
21	Objective: develop a plan to meet regulatory requirements for handling equipment.						
22	Objective: develop a plan to meet regulatory requirements for handling equipment.						
23	Objective: develop a plan to meet regulatory requirements for handling equipment.						
24	Objective: develop a plan to meet regulatory requirements for handling equipment.						
25	Objective: develop a plan to meet regulatory requirements for handling equipment.						
26	Objective: develop a plan to meet regulatory requirements for handling equipment.						
27	Objective: develop a plan to meet regulatory requirements for handling equipment.						
28	Objective: develop a plan to meet regulatory requirements for handling equipment.						
29	Objective: develop a plan to meet regulatory requirements for handling equipment.						
30	Objective: develop a plan to meet regulatory requirements for handling equipment.						
31	Objective: develop a plan to meet regulatory requirements for handling equipment.						
32	Objective: develop a plan to meet regulatory requirements for handling equipment.						
33	Objective: develop a plan to meet regulatory requirements for handling equipment.						
34	Objective: develop a plan to meet regulatory requirements for handling equipment.						
35	Objective: develop a plan to meet regulatory requirements for handling equipment.						
36	Objective: develop a plan to meet regulatory requirements for handling equipment.						
37	Objective: develop a plan to meet regulatory requirements for handling equipment.						
38	Objective: develop a plan to meet regulatory requirements for handling equipment.						
39	Objective: develop a plan to meet regulatory requirements for handling equipment.						
40	Objective: develop a plan to meet regulatory requirements for handling equipment.						
41	Objective: develop a plan to meet regulatory requirements for handling equipment.						
42	Objective: develop a plan to meet regulatory requirements for handling equipment.						
43	Objective: develop a plan to meet regulatory requirements for handling equipment.						
44	Objective: develop a plan to meet regulatory requirements for handling equipment.						
45	Objective: develop a plan to meet regulatory requirements for handling equipment.						
46	Objective: develop a plan to meet regulatory requirements for handling equipment.						
47	Objective: develop a plan to meet regulatory requirements for handling equipment.						
48	Objective: develop a plan to meet regulatory requirements for handling equipment.						
49	Objective: develop a plan to meet regulatory requirements for handling equipment.						
50	Objective: develop a plan to meet regulatory requirements for handling equipment.						
51	Objective: develop a plan to meet regulatory requirements for handling equipment.						
52	Objective: develop a plan to meet regulatory requirements for handling equipment.						
53	Objective: develop a plan to meet regulatory requirements for handling equipment.						
54	Objective: develop a plan to meet regulatory requirements for handling equipment.						
55	Objective: develop a plan to meet regulatory requirements for handling equipment.						
56	Objective: develop a plan to meet regulatory requirements for handling equipment.						
57	Objective: develop a plan to meet regulatory requirements for handling equipment.						
58	Objective: develop a plan to meet regulatory requirements for handling equipment.						
59	Objective: develop a plan to meet regulatory requirements for handling equipment.						
60	Objective: develop a plan to meet regulatory requirements for handling equipment.						
61	Objective: develop a plan to meet regulatory requirements for handling equipment.						
62	Objective: develop a plan to meet regulatory requirements for handling equipment.						
63	Objective: develop a plan to meet regulatory requirements for handling equipment.						
64	Objective: develop a plan to meet regulatory requirements for handling equipment.						
65	Objective: develop a plan to meet regulatory requirements for handling equipment.						
66	Objective: develop a plan to meet regulatory requirements for handling equipment.						
67	Objective: develop a plan to meet regulatory requirements for handling equipment.						
68	Objective: develop a plan to meet regulatory requirements for handling equipment.						
69	Objective: develop a plan to meet regulatory requirements for handling equipment.						
70	Objective: develop a plan to meet regulatory requirements for handling equipment.						
71	Objective: develop a plan to meet regulatory requirements for handling equipment.						
72	Objective: develop a plan to meet regulatory requirements for handling equipment.						
73	Objective: develop a plan to meet regulatory requirements for handling equipment.						
74	Objective: develop a plan to meet regulatory requirements for handling equipment.						
75	Objective: develop a plan to meet regulatory requirements for handling equipment.						
76	Objective: develop a plan to meet regulatory requirements for handling equipment.						
77	Objective: develop a plan to meet regulatory requirements for handling equipment.						
78	Objective: develop a plan to meet regulatory requirements for handling equipment.						
79	Objective: develop a plan to meet regulatory requirements for handling equipment.						
80	Objective: develop a plan to meet regulatory requirements for handling equipment.						
81	Objective: develop a plan to meet regulatory requirements for handling equipment.						
82	Objective: develop a plan to meet regulatory requirements for handling equipment.						
83	Objective: develop a plan to meet regulatory requirements for handling equipment.						
84	Objective: develop a plan to meet regulatory requirements for handling equipment.						
85	Objective: develop a plan to meet regulatory requirements for handling equipment.						
86	Objective: develop a plan to meet regulatory requirements for handling equipment.						
87	Objective: develop a plan to meet regulatory requirements for handling equipment.						
88	Objective: develop a plan to meet regulatory requirements for handling equipment.						
89	Objective: develop a plan to meet regulatory requirements for handling equipment.						
90	Objective: develop a plan to meet regulatory requirements for handling equipment.						
91	Objective: develop a plan to meet regulatory requirements for handling equipment.						
92	Objective: develop a plan to meet regulatory requirements for handling equipment.						
93	Objective: develop a plan to meet regulatory requirements for handling equipment.						
94	Objective: develop a plan to meet regulatory requirements for handling equipment.						
95	Objective: develop a plan to meet regulatory requirements for handling equipment.						
96	Objective: develop a plan to meet regulatory requirements for handling equipment.						
97	Objective: develop a plan to meet regulatory requirements for handling equipment.						
98	Objective: develop a plan to meet regulatory requirements for handling equipment.						
99	Objective: develop a plan to meet regulatory requirements for handling equipment.						
100	Objective: develop a plan to meet regulatory requirements for handling equipment.						

# Classroom Education



## Environmental Stewardship Short Course I For California Dairy Operators

California Dairy Quality Assurance  
In Cooperation With Its Partners



Expanding Curriculum

**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #7  
Assessing the Risk of Ground and Surface Water Contamination From  
Manure Storage Facilities

**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #8  
Assessing the Risk of Ground or Surface Water Contamination From  
Corral Management

**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #9  
Assessing the Risk of Ground and Surface Water Contamination From  
Silage Production and Storage

**FARM•A•SYST**  
Farmstead Assessment System

Worksheet #13  
Assessing the Risk of Ground and Surface Water Contamination From  
Manure Management

Why Should I be concerned?

Manure, in solid and liquid forms, is used as a fertilizer and soil conditioner.

## Risk Assessment Documents

University of California Cooperative Extension  
Sizing Dairy Manure Holding Pond

Step 10 of 12:  
 runoff Volume

**runoff Summary**

Type	Area (sq ft)	Runoff (cu ft) for Storage Period		
		Storm	Normal	Total
Roofed Not Diverted	118688	69937	239444	309381
Concrete	223972	46882	155778	202660
Unpaved	183238	131758	148972	280730
<b>Subtotal</b>	<b>525900</b>	<b>248543</b>	<b>544194</b>	<b>792737</b>
Type	Area (sq ft)	Direct Runoff (cu ft) for Storage Period		
		Storm	Normal	Total
Setting Basin				

**The Do's and Don'ts of Manure Management and Clean Water**

The Partner operators of the California Dairy Quality Assurance Program (CDQAP) realize there may be some confusion regarding legal and sound manure management practices.

This pamphlet of accurate and authoritative manure management practices was developed to assist producers. The practices described in this publication are from California. The authors chosen, had no charge, have already occurred in their own operations. If you have any questions, or need the assistance of a specialist, please call your representative to the CDQAP board at once.

Contributors are welcome to get this pamphlet for free. Please contact: CDQAP Board Members

California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)  
California Dairy Quality Assurance Program (CDQAP)

## Teaching Tools

San Joaquin Valley Air Pollution Control District  
Supplemental Application Form  
Permit Application for Dairy Farms

Please list the total number of cows currently at your dairy:

Milk cows	Dry Cows	Heifers 15-24 months	Heifers 7-14 months	Heifers 4-6 months	Calves	Total

Please list the maximum number of cows that your farm was designed for:

Milk cows	Dry Cows	Heifers 15-24 months	Heifers 7-14 months	Heifers 4-6 months	Calves	Total

## Permits



# **Region 5's Administrative Permit**

## ***A Crisis of Inadequate Resources***

*and*

## ***How to Fix It***



***Michael Payne DVM, PhD***  
***Department of Environmental Toxicology***  
***University of California – Davis***  
***Program Director, CDQAP***

CALIFORNIA DAIRY



Quality Assurance

P R O G R A M



**Questions?**